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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,920	02/14/2001	Ieyasu Kobayashi	OHS-104	9687

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Rader Fishman & Grauer
1233 20th Street N W Suite 501
Washington, DC 20036

EXAMINER

RESAN, STEVAN A

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 09/26/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-4

Office Action Summary

Application No.

09/762920

Applicant(s)

KOBAYASHI et al

Examiner

RESAW

Group Art Unit

1773

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-11 is/are pending in the application.
Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-11 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
 - ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 143
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

2. (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
3. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5-9, 11 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Masafumi et al JP-11-144227.

Masafumi disclose a biaxially oriented polyester film which is made from polyethylene – 2-6-naplethalene dicarboxylate (as in claim 7) which is extruded and biaxially oriented and heat set in the ranges taught and which has a magnetic layer deposited one side (see [0020], [0028], [0029], [0046], [0047]). The film contains particulate matter that gives rise to surface roughness.

It appears that the example inherently meets the property limitations In re Best (CCPA) 195 USPQ 430. The PTO is unable to compare prior art products. In re Brown 59 CCPA 1036,459 F2d 531,173 USPQ 685 (1972). Where there is reason to believe that a limitation may be critical to establishing novelty and an inherent characteristic of the prior art an applicant may be required to prove that the subject matter shown in the prior art does not possess the

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characteristic relied upon. In re Ludtke, 169 USPQ 563, 566 (1971) In re Swinehart, 169 USPQ 226, 229.

Nevertheless Masafumi et al teach various composition and process conditions. It would have been obvious to one of ordinary skill in the art to vary parameters in order to optimize the magnetic properties of a magnetic media using the film, for a substrate. It is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F2d 454, 456 105 USPQ 233,235 (CCPA) 1955.

Claim 1-3, 5-9 and 11 recite properties of dimensional change, modulus, crystallinity, and endothermal peak. Insofar as these properties arise from the chemical composition of the substrate these properties would be the same since the same polymer is used. Insofar as these properties arise as a result of biaxial orientation, it appears that they would also at least overlap this range since the teachings regarding the range of process condition taught by Masafumi et al also at least overlap those taught by the present specification.

When a polyethylene 2, 6 naphthalene polymer film is biaxially oriented the orientation produces regions of crystallinity. As is well known in the polymer art more crystalline polymers are less prone to dimensional changes. Sakamoto et al and Seo et al are presented, as evidence that both the percentage crystallinity and endothermic properties of a film as taught by Masafumi et al would at least overlap the claim limitations. With respected to the surface roughness properties it would have been obvious to one of ordinary skill in the art to adjust the particle sizes and content of the film to give a desired surface roughness depending upon whether the film was employed as a substrate for a coated or thin film magnetic tape and whether or not a backcoat was employed to give differing roughness properties for each side.

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Since dimensional change and modulus influence the operation of reading and writing upon a magnetic media by a head, it would have been obvious to vary these parameter to produce a tape which would not distort the signal read or written due to positional changes on the tape due to changes in dimensions including curl and breakage.

6. Claims 1-3, 5, 7-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hosoi et al 5,665,454.

Hosoi et al disclose a biaxially oriented polyester film which is made from polyethylene 2-6 naphthalene dicarboxylate which is extruded and biaxially oriented and heat set in the ranges taught and which has a magnetic layer deposited on one side (see examples). The film contains particulate matter which gives rise to surface roughness.

Even if the examples do not inherently meet the claim limitation it would have been obvious to one of ordinary skill in the art to vary the process parameters to change properties in order to optimize magnetic properties of a magnetic layer deposited on the substrate. The examiner's reasoning and case law applied is essentially the same as previously presented.

7. Claims 1, 2, 4, 5, 7, 8, 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sakamoto et al 5,364,684.

Sakamoto et al disclose a biaxially oriented polyester film which in made from polythylene 2-6 naphthalene dicarboxylate which is extruded, biaxially oriented and heat set in the ranges taught and which has a magnetic layer deposited on one side (see examples).

Since the WRz of the two sides are not given, the examiner takes the position that Sakamoto et al would have varied surface properties to optimize performance and the relationship, although undisclosed, would be inherent in the examples.

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With respect to obviousness the examiner reasoning is essentially the same as previously set forth for Masafumi et al and Hossi et al.

The examiner has carefully reviewed the specification and deems that patentable subject matter is present based upon the results of the examples 4-7 shown in Table 2. If the limitations of claims 2, 6, and 7 are incorporated into claim 1, then claim 1 would be deemed allowable as being commensurate in scope with a showing of unexpected results contained in these examples.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Seo et al is cited as showing crystallization energy of 20 J/g (20mJ/mg) for biaxially oriented polyester films.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stevan Resan whose telephone number is 703-308-4287. The examiner can normally be reached on Tuesday-Friday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is 703-308-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2351.

S. Resan/mn

September 12, 2002


STEVAN A. RESAN
PRIMARY EXAMINER

(54) BASE FILM FOR MAGNETIC RECORDING TAPE

(11) 5-212786 (A) (43) 24.8.1993 (19) JP
 (21) Appl. No. 4-21168 (22) 6.2.1992
 (71) TEIJIN LTD (72) MASAHIRO HOSOI(3)
 (51) Int. Cl.⁵. B29C55/12, C08J5/18, C08L7/02, G11B5/704//B29K67/00, B29L7/00, C08L67/00

PURPOSE: To improve the electromagnetic conversion properties of magnetic recording tapes with reduced recording distortion and output variation by specifying the values of the properties of a polyethylene-2,6-naphthalate film including the Young's modulus and thermal shrinkage.

CONSTITUTION: A base film for magnetic recording tapes is obtained by arranging the properties of a polyethylene-2,6-naphthalate film as: the longitudinal Young's modulus is 850kg/mm² or more; the transverse Young's modulus is 550kg/mm² or more; the thermal shrinkage after treatment at 100°C for 30min. is 1.0% or less for both longitudinal and transverse directions; the saturated thermal shrinkage at 70°C is 0.1% or less for both longitudinal and transverse directions; the thermal shrinkage after storage at relative humidity of 65% (40°C) for 1hr is 0.01% or less. The magnetic recording tapes have distinguished properties of electromagnetic conversion without generating image distortion at starting and skipping and skew after storage at around room temperature.

(54) POLYETHYLENE-2,6-NAPHTHALATE FILM

(11) 5-212787 (A) (43) 24.8.1993 (19) JP
 (21) Appl. No. 4-21169 (22) 6.2.1992
 (71) TEIJIN LTD (72) MASAHIRO HOSOI(3)
 (51) Int. Cl.⁵. B29C55/12, C08J5/18//C08L67/02

PURPOSE: To provide a polyethylene-2,6-naphthalate film for magnetic recording tapes free from skew, track dislocation, reduction in electromagnetic output, and deformation and damage during traveling of the tape.

CONSTITUTION: A polyethylene 2,6-naphthalate film with the following properties is prepared: the longitudinal Young's modulus (EM) of 550kg/mm² or more; the transverse Young's modulus (ET) of 700kg/mm² or more; the ratio of the Young's moduli (ET/EM) of 1.1-2.0; the longitudinal shrinkage after storage at relative humidity 65% (70°C) for 1hr without a load of 0.02% or less; the longitudinal temperature expansion coefficient (α_t) $10 \times 10^{-6}/^{\circ}\text{C}$ or less; the longitudinal humidity expansion coefficient (α_h) $15 \times 10^{-6}/\% \text{RH}$ or less.

(54) BIAXIALLY ORIENTED THERMOPLASTIC RESIN LAMINATED FILM AND MANUFACTURE THEREOF

(11) 5-212788 (A) (43) 24.8.1993 (19) JP
 (21) Appl. No. 4-293848 (22) 6.10.1992 (33) JP (31) 91p.334611 (32) 25.11.1991
 (71) TORAY IND INC (72) ISAZUMI UEHA(2)
 (51) Int. Cl.⁵. B29C55/12, B29C47/06, B32B7/02, B32B15/08, B32B27/20//B32B3/30, B29L9/00

PURPOSE: To provide a film which has high S/N and surface durability for a vapor deposition film and keeps an excellent sliding property for both its depositing and traveling surfaces.

CONSTITUTION: A biaxially oriented thermoplastic resin laminated film is characterized by the following properties: the surface roughness (Ra) of the one surface (A surface) of the film is within 3nm, and its peak number (RMS-n) is 40 or more; the surface roughness (Ra) of the other surface (B surface) is 3-50nm; the total reflection Raman crystallization indices for both A and B surfaces are 20cm⁻¹ or less.